

### **REMARKS**

Applicant has carefully reviewed and considered the Office Action mailed on July 17, 2003, and the references cited therewith.

No claims are amended, canceled, or added; as a result, claims 1-51 are now pending in this application.

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#### ***§103-Rejection-of-the-Claims***

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**Claims 1-23, 25-29, 31-34, 37-38, 40-43, and 45-51 were rejected under 35 USC § 103(a) as being unpatentable over John et al. (Journal of Lightwave Technology).**

Applicant respectfully traverses the rejection of claim 1 because John et al. do not teach all of the elements of claim 1. Claim 1 recites:

“a first periodic array of unit cells formed in a substrate from first voids connected by imaginary bonds, wherein the first periodic array alone forms an incomplete bandgap; and  
a second periodic array of second voids, wherein each second void is arranged along one of the imaginary bonds so as to modify each unit cell to form a complete photonic bandgap.”

John et al. disclose a photonic band gap material having a structure different from the structure recited in claim 1. For example, Figure 1 of John et al. shows a photonic band gap material having a number of voids. However, John et al. do not disclose a relationship between first voids and an array of second voids in which each of the second voids is arranged along one of the imaginary bonds connecting the first voids. Thus, John et al. do not disclose, for example, “a second periodic array of second voids, wherein each second void is arranged along one of the imaginary bonds so as to modify each unit cell to form a complete photonic bandgap”. Since John et al. do not disclose all of the elements of claim 1, claim 1 is patentable over John et al.

Further, the Examiner rejected claim 1 based on John et al. Applicant respectfully traverses the single reference rejection under 35 U.S.C. § 103 because not all of the recited elements of claim 1 are found in John et al. Since all of the elements of the claim 1 are not found in John et al, Applicant assumes that the Examiner is taking Official Notice of the missing elements. Applicant respectfully objects to the taking of Official Notice with a single reference obviousness rejection and, pursuant to M.P.E.P. 2144.03, Applicant respectfully traverses the

assertion of Official Notice and requests that the Examiner cite references in support of this position.

Based on the reasons presented above, claim 1 is patentable over John et al. Applicant requests that the rejection of claim 1 be reconsidered and withdrawn and that claim 1 and its dependent claims be allowed.

Independent claims 9, 16, 23, 29, 38 and 43 recite elements similar to the elements of claim 1. Thus, claims 9, 16, 23, 29, 38 and 43 are also patentable over John et al. for the reasons similar to the reasons presented above regarding claim 1. Applicant requests that the rejection of claims 9, 16, 23, 29, 38 and 43 be reconsidered and withdrawn and that claims 9, 16, 23, 29, 38 and 43 and their dependent claims be allowed.

**Claims 24, 30, 35, 36, 39, and 44 were rejected under 35 USC § 103(a) as being unpatentable over John et al.**

Claims 24, 30, 35, 36, 39, and 44 are dependent claims of the above independent claims. In view of the reasons presented above, these dependent claims are also patentable because they depend on patentable independent claims. Applicant requests that the rejection of claims 24, 30, 35, 36, 39, and 44 be reconsidered and withdrawn and that claims 24, 30, 35, 36, 39, and 44 be allowed.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's representative ((612) 373-6969) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743

Respectfully submitted,

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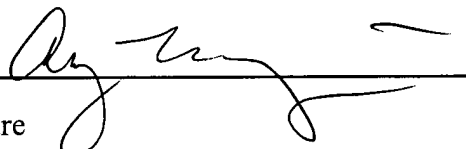
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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 17th day of October, 2003.

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